

Claims

1. A medical device having a medical sharp device, a retainer for retaining the sharp device and a movable retractor adapted for connection with a connection member of the retainer and for moving the sharp device from a use position to a more retracted position thereof, wherein a tilt system is provided for tilting the sharp device upon movement of the sharp device to the more retracted position thereof, the tilt system including a deflector on the retractor for deflecting the connection member during movement of the retractor into engagement with the retainer, the connection member having an engagement part thereof on a longitudinal axis, the engagement part being deflected off the axis by the deflector.
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2. A medical device as claimed in claim 1 in which the medical sharp device comprises a needle.
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3. A medical device as claimed in any preceding claim which comprises a syringe, the retractor being formed on a plunger of the syringe.
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4. A medical device as claimed in claim 3 in which the syringe has a cylindrical barrel, a shoulder formed at one end thereof and a cylindrical neck formed on the shoulder.
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5. A medical device as claimed in claim 4 in which the retainer is located in the neck, and in which a hub is provided for preventing forward movement of the retainer out of the neck.
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6. A medical device as claimed in any preceding claim in which the retainer includes a cylindrical sharp device retaining portion.

- 5 7. A medical device as claimed in any preceding claim in which the connection member has one end connected to a sharp retaining portion of the retainer and another, distal end thereof located on a longitudinal axis of the medical device in one configuration thereof.
8. A medical device as claimed in claim 7 in which the distal end of the connection member engages the deflector.
- 10 9. A medical device as claimed in any preceding claim in which the connection member comprises a flexible leg.
10. A medical device as claimed in claim 9 in which two said flexible legs are provided, preferably formed in a diamond shape.
- 15 11. A medical device as claimed in claim 10 in which each flexible leg is joined at one end thereof to a sharp retaining portion of the retainer and at the other, distal end thereof to the other flexible leg.
- 20 12. A medical device as claimed in any one of claims 7 to 11 in which a curved (preferably domed) nose is formed on the distal end of at least one connection member.
- 25 13. A medical device as claimed in claim 11 in which the joined distal ends form an apex which is located on a longitudinal axis of the medical device in one configuration thereof.
14. A medical device as claimed in claim 13 in which the apex is domed.

15. A medical device as claimed in any one of claims 9 to 14 in which at least one leg includes a stop part adapted to releasably abut against a retainer surface inside a main body of the medical device.
- 5 16. A medical device as claimed in claim 15 in which the stop part comprises a ledge and in which the retainer surface comprises an annular recess located in the main body.
- 10 17. A medical device as claimed in any one of claims 9 to 16 in which at least one leg includes a formation adapted to lock with the moveable retractor.
- 15 18. A medical device as claimed in claim 17 in which the formation comprises a ledge.
19. A medical device as claimed in claim 18 in which the retractor has a catch for positively locking with the ledge, preferably with generally planar abutment faces of the catch and ledge abutting one another.
- 20 20. A medical device as claimed in claim 17 or claim 18 or claim 19 in which the retractor has a locking cavity and the at least one leg is freely insertable and removable from said cavity in intermediate positions of the leg relative to the cavity and in which the leg and cavity are configured such that the locking of the leg to the retractor occurs upon a full insertion of the leg into the cavity.
- 25 21. A medical device as claimed in claim 17 or 18 or 19 or 20 in which the retractor has an entrance having an entrance ledge adapted to engage the formation.

22. A medical device as claimed in any one of claims 9 to 21 in which the deflector comprises an abutment for guiding the leg away from a longitudinal axis of the medical device.
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23. A device as in claim 22 in which the abutment is adapted to guide the leg sideways into a side chamber portion of the retractor.
24. A medical device as claimed in claim 22 or claim 23 in which the
10 abutment includes a ramp.
25. A medical device as claimed in claim 24 in which the ramp is inclined at an angle of about 70 degrees to a longitudinal axis of the medical device.
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26. A medical device as claimed in claim 24 or 25 in which the ramp is formed in an interior space of the retractor, and in which the ramp is spaced from a rear surface of the interior spaced by a wall substantially parallel to a longitudinal axis of the device.
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27. A medical device as claimed in claim 26 in which the wall is aligned with the longitudinal axis of the medical device.
28. A medical device as claimed in any one of claims 22 to 27 in which the
25 abutment extends across the longitudinal axis.
29. A medical device as claimed in claim 28 in which at least part of the wall is located on an opposite side of the longitudinal axis to at least part of the ramp.

30. A medical device having a medical sharp device, a retainer for retaining the sharp device and a moveable retractor adapted for connection with a connection member of the retainer and for moving the sharp device from a use position to a more retracted position thereof, wherein a tilt system is provided for tilting the sharp device upon movement of the sharp device to the more retracted position thereof, the tilt system including a deflector on the retractor for deflecting the connection member, the connection member having a portion thereof on a central axis of the retainer which engages the deflector and is guided away from the central axis by the deflector.

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